PN   - JP2000209568 A 20000728
PD   - 2000-07-28
PR   - JP19990010168 19990119
OPD - 1999-01-19
TI   - MONITORING SYSTEM DEVICE
IN   - HONDA TOYOTA;IMANISHI SHINYA,SEKI JUNICHI;HAMAZAKI KENICHI;KURODA MASAYOSHI
PA   - HITACHI LTD
IC   - H04N7/18 ; G08B13/196

TI   - Monitoring system indicates caution of an intruder, before taking photograph of image of site, by generating sound and light near camera
PR   - JP19990010168 19990119
PN   - JP2000209568 A 20000728 DW200049 H04N7/18 006pp
PA   - (HITA) HITACHI LTD
IC   - G08B13/196 ;H04N7/18
AB   - JP2000209568 NOVELTY - Caution of an intruder is detected before taking photograph of an image of site by generating sound and light near camera. The image is then photographed and transmitted via a communication circuit.
       - DETAILED DESCRIPTION - Image is converted to the form which can be transmitted by the communication circuit.
       - USE - For monitoring existence of intruder.
       - ADVANTAGE - Since sound is generated in the calm situation, the caution of intruder is detected, precisely.
       - (Dwg.1/4)
OPD - 1999-01-19
AN   - 2000-537983 [49]

PN   - JP2000209568 A 20000728
PD   - 2000-07-28
AP   - JP19990010168 19990119
IN   - KURODA MASAYOSHI;HONDA TOYOTA,SEKI JUNICHI;IMANISHI SHINYA;HAMAZAKI KENICHI
PA   - HITACHI LTD
TI   - MONITORING SYSTEM DEVICE
AB   - PROBLEM TO BE SOLVED: To surely photograph a desired image even in a small number of chances by generating sound or light at a position near a photographing device such as a camera to attract the attention of an intruder after the abnormality is detected and photographing the relevant image via the photographing the intruder.
       - SOLUTION: A photographing means is prepared to photograph the situation of a job site together with one or both of a light emitter means and a sound generator means. Sound or light is generated at a position near a photographing device such as a camera to attract the attention of an intruder toward the photographing device after the abnormality is detected and before the image of the job site is photographed. Then the relevant image is photographed. If a sensor106 detects the abnormality at a terminal device of an image communication device, for example, a light emitting part110 or a sound generating part 111 of a camera 108 are actuated via a camera control terminal114. Thus, an intruder pays his/her attention to the camera108 and the face of the intruder is photographed. Either one of parts 110 and 111 may be employed or both of them may be operated together with each other.
I   - H04N7/18 ;G08B13/196
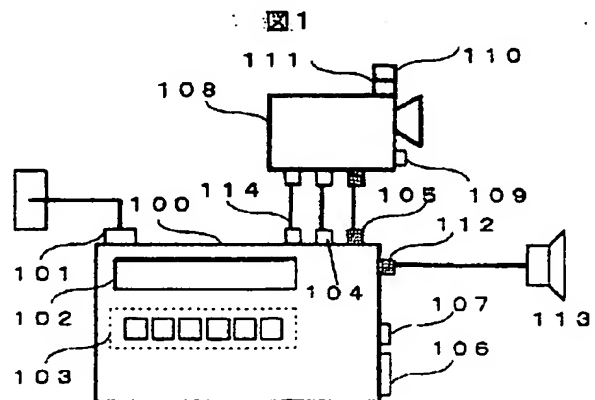
(54)【発明の名称】　監視システム装置

(57)【要約】

【課題】侵入者を検知してその姿を監視する場合、事前に撮影機器の近くから侵入者の注意を引くような信号を発生させ、正面からの姿を撮影できる可能性を高める。

【解決手段】侵入者を撮影するカメラの近くに光および音を発生させる装置を設け、記録または送信する画像を撮影する前に、光および音を発生させて侵入者の注意を引き、カメラの方を向かせ、正面からの姿を撮影できるようにする。

図1

【特許請求の範囲】

【請求項1】異常を検出した場合に、現場の状況をカメラ等で撮影する監視システムにおいて、現場の状況を撮影するための撮影手段と、光を発生させる発光手段および音を発生させる音発生手段の少なくとも一方もしくは両方を備え、異常を検出後、現場の画像を撮影する前に、カメラ等の撮影装置の方向に注意を引くために撮影装置の近傍から音や光を発生させて注意を引き、その画像を撮影できるようにしたことを特徴とする監視システム装置。

【請求項2】請求項1において、通信手段および画像を通信回線で送信できる形態に変換する手段を備え、撮影した画像を通信手段を利用して別の場所に送信する場合に、通信回線等の接続が完了し、画像の送信が可能な状態になってから音や光を発生させて画像を撮影することを特徴とする監視システム装置。

【請求項3】請求項1または2において、センサ等が異常を検出してから所定の時間が経過した後に音や光を発生させて画像を撮影することを特徴とする監視システム装置。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、センサなどを用いて異常を検知し、異常時の画像を記録する監視システムに係わり、特に撮影した異常発生時の画像を通信回線等で伝送する監視システム装置に関する。

【０００２】

【従来の技術】センサ等を用いて異常を検知し、異常が発生している状況の画像を撮影したり音声を集音し、通信に適するようにデータ圧縮処理を施して画像および音声情報を伝送する監視システム装置としては、特開平9－205642号公報などに記載されている。

【０００３】

【発明が解決しようとする課題】異常な侵入者をセンサ等で検出し、侵入時の様子をカメラ等で撮影するシステムにおいて、センサ等の検出タイミングに連動して撮影を開始するようになっていると、侵入者が誰であるかを特定できるカメラに顔を向けている瞬間を撮影できるとは限らない。

【０００４】ビデオカメラ等で、連続して動画を撮影し記録できる場合と異なり、静止画を1枚だけまたは間欠的にしか撮影できない場合は静止画を取り込むタイミングで侵入者を特定できる画像を撮影できることが重要になる。

【０００５】そこで、本発明の目的は、上記課題を解決し、画像を撮影する前に侵入者の注意を引くような現象を発生させ、撮影装置に対して注目した瞬間を撮影できるようにして、少ない撮影機会でも確実に所望の画像を撮影できることが可能な監視システム装置を提供することにある。

【０００６】

【課題を解決するための手段】上記目的は、監視システムにおいて、センサなどの異常を検知する手段と、注意を引くための光および音を発生させる手段と、画像を取り込むための撮影手段と、撮影した画像を記憶する手段と、記憶した画像を送信する手段と、画像データをディジタル化して圧縮する手段と、通信手段と、送受信やユーザ操作などの処理を制御する制御手段と、電話回線接続手段とを備えることによって達成することができる。

【０００７】

【発明の実施の形態】以下本発明の画像通信装置の実施の形態例について説明する。

【０００８】図1は本発明の画像通信装置の端末機の一例を示す図で、１００は本発明の画像通信装置の端末機本体、１０１は電話回線接続端子、１０２は表示装置、１０３は操作ボタン、１０４は映像入力端子、１０５は音声入力端子、１０６はセンサ等の入力端子、１０７はデータ入出力端子、１０８はビデオカメラ、１０９はマイク、１１０は光発生部、１１１は音発生部、１１２は音声出力端子、１１３はスピーカ、１１４はカメラ制御用端子である。

【０００９】図2は本発明の画像通信装置のセンタ機の一例を示す図で、２００は本発明の画像通信装置のセンタ機本体、２０１は電話回線接続端子、２０２はハンドセット、２０３はダイヤル用ボタン、２０４は映像出力端子、２０５は音声出力端子、２０６はデータ入出力端子、２０７はテレビモニタである。

【００１０】図3は図1で示した画像通信装置の端末機の構成を示すブロック構成図で、３０１は全体の動作を制御するＣＰＵ、３０２はデータをやり取りするシステムバス、３０３は送受信する画像や音声などのデータを記憶するためのメモリ、３０４は画像入力端子１０４からのアナログの映像信号をディジタル信号に変換する画像用Ａ／Ｄ変換器、３０５はディジタル信号に変換された画像データの圧縮・伸長処理や、文字表示などの加工処理を行なう画像処理部。

【００１１】３０６は画像出力端子１０２に出力するディジタル信号に変換されている画像データを保持する画像メモリ、３０７はモデムを用いたディジタル通信の確立・切断や送受信するデータのやり取りを管理する通信制御部、３０８はディジタル通信時に画像通信装置内で扱っているディジタルデータを一般の公衆回線で送受信するためにアナログ信号に変復調するためのモデム、３０９は音声入力端子１０５からのアナログの音声信号をディジタル信号に変換する音声用Ａ／Ｄ変換器。

【００１２】３１０はディジタル信号に変換された音声データの圧縮・伸長処理を行なう音声処理部、３１１はディジタル信号に変換されている音声データをアナログの音声信号に変換する音声用Ｄ／Ａ変換器、３１２は操作ボタン１０３からの入力を制御する入力制御部、３１

3は時間を計測するためのタイマ、314はデータ入出力端子113とのデータ入出力を制御するためのデータ制御部である。

【0013】図4は図2で示した画像通信装置のセンタ機の構成を示すブロック構成図で、401は全体の動作を制御するCPU、402はデータをやり取りするシステムバス、403は送受信する画像や音声などのデータを記憶するためのメモリ、404はディジタル信号として受信した画像データの伸長処理を行なう画像処理部、405は処理中の画像データを保持する画像メモリ、406は404で生成したビットマップの画像を、画像出力端子204へのアナログの映像信号に変換する画像用A／D変換器。

【0014】407はモデムを用いたディジタル通信の確立・切断や送受信するデータのやり取りを管理する通信制御部、408はディジタル通信時に画像通信装置内で扱っているディジタルデータを一般の公衆回線で送受信するためにアナログ信号に変復調するためのモデム、409はハンドセット202からのアナログの音声信号をディジタル信号に変換する音声用A／D変換器。

【0015】410はディジタル信号に変換された音声データの圧縮・伸長処理を行なう音声処理部、411はディジタル信号に変換されている音声データをアナログの音声信号に変換する音声用D／A変換器、412は操作ボタン203からの入力を制御する入力制御部、413はデータ入出力端子206とのデータ入出力を制御するためのデータ制御部である。

【0016】端末機100およびセンタ機200は、電話回線接続端子101および201を用いて電話回線を経由して接続することで映像および音声の送受信が可能になる。

【0017】端末機100は、センサ106やカメラ108からの映像で異常を検出した場合などに、回線接続端子101を用いて予め登録されているセンタ機200の電話番号に発信するか、センタ機200が端末機100に電話をかけて端末機100が自動的に応答することて電話回線を接続した後、自機のモデムを動作させるとともに、相手機にトーン信号を送り相手機のモデムも動作させ両機のモデムを介したディジタル通信を確立する。

【0018】端末機からセンタ機に送信する音声は、端末機に接続されているカメラ108に内蔵されているマイク109で集音された音声を音声入力端子105を介して取り込み、音声用A／D変換器309でディジタル化した後、音声処理部310でデータ圧縮処理を行ないデータ量を削減して所定の長さに分割してパケット化し、送信処理が始まるまでの間メモリ303に格納される。

【0019】センタ機から端末機に音声を送信する場合は、ハンドセット202の送話口からの音声を、音声用A／D変換器409でディジタル化した後、音声処理部410でデータ圧縮処理を行ないデータ量を削減して所定の長さに分割してパケット化し、送信処理が始まるまでの間メモリ403に格納される。

【0020】端末機で受信した音声パケットは一旦メモリ303に格納され、音声処理部310が一定期間毎に取り出して、データ伸長処理を行ない非圧縮のディジタル音声に戻した後、音声用D／A変換器311でアナログ化して音声出力端子112から出力し、接続されたスピーカ113などから発せられる。

【0021】センタ機で受信した音声パケットは一旦メモリ403に格納され、音声処理部410が一定期間毎に取り出して、データ伸長処理を行ない非圧縮のディジタル音声に戻した後、音声用D／A変換器411でアナログ化して、ハンドセット202の受話口から、および音声出力端子205を介して接続されたテレビモニタ207の内蔵スピーカから発せられる。

【0022】なお、ここでは端末機からの音声はカメラ108内蔵のマイク109で集音するとして説明したが、他のマイクや音源からの音声を音声入力端子105に接続して送信してもよい。同様にセンタ機の音声も音声出力端子205を介して他の機器に接続して再生・記録してもよい。

【0023】カメラ108で撮影した画像は、画像入力端子104を介して取り込みを行なった時点の1枚分の画像を画像用A／D変換器304でディジタル化して、一旦画像メモリ306に格納した後、画像処理部305が、画像メモリ306内の画像データを例えば8ドット×8ドットの適当な領域のブロックに区切り、それぞれの領域に対してDCT（離散コサイン変換）などの変換処理を行なった後、量子化などを行なってデータ量を削減し、送信処理が行われるまでの間メモリ303に格納される。画像メモリ306の画像データは画像処理部305で1画面分の画像データの圧縮処理が終了するまでの間、保持されるようになっていて、1画面分の圧縮処理が終了すると次の画面を取り込む。

【0024】センタ機で受信した画像パケットは、画像処理部404でデータ伸長処理を行ない画像メモリ405に蓄積する。画像処理部404は1画面分の画像データが揃うと画像用D／A変換器406でアナログ信号に戻し、画像出力端子204から出力する。

【0025】端末機では、通信制御部307が、メモリ303内に格納されている画像・音声などのデータをデータの種別などを示すヘッダ情報を付加してパケット化しセンタ機に伝送する。

【0026】モデム308を用いて変調して回線接続端子101から公衆回線網に出力し、逆に該公衆回線網から回線接続端子101を通して受信した信号をモデム308を用いて復調してディジタル信号に戻す。

【0027】通信制御部307が受信したデータは、受

信パケットを解析して該パケット内のヘッダ情報を元に
パケットの種別を判断し、該ヘッダ情報を除いたデータ
本体をそれぞれの処理を行なう部分に転送する。

【0028】上記パケットデータの種別が音声データの
場合は音声処理部310へデータを転送し、伸長してデ
ィジタルデータに戻した後、音声用D／A変換器311
に送り、アナログの音声信号に戻し、音声出力端子11
2を介してスピーカ113に出力する。

【0029】センタ機では、通信制御部407が、メモ
リ403内に格納されている音声などのデータをデータ
の種別などを示すヘッダ情報を付加してパケット化し端
末機に伝送する。

【0030】モデム408を用いて変調して回線接続端
子201から公衆回線網に出力し、逆に該公衆回線網か
ら回線接続端子101を通して受信した信号をモデム4
08を用いて復調してディジタル信号に戻す。

【0031】通信制御部407が受信したデータは、パ
ケットを解析してヘッダ情報を元にパケットの種別を判
断し、該ヘッダ情報を除いたデータ本体をそれぞれの処
理を行なう部分に転送する。

【0032】上記パケットデータの種別が音声データの
場合は音声処理部410へデータを転送し、伸長してデ
ィジタルデータに戻した後、音声用D／A変換器411
に送り、アナログの音声信号に戻し、ハンドセット20
2および音声出力端子205に出力する。

【0033】上記パケットデータが画像データの場合は
画像処理部404へ転送し圧縮されているデータを伸長
して画像メモリ405に格納する。該画面メモリ405
はバッファを2画面分持っていて、一方は直前に受信し
た画像を保持し、表示用のバッファとして用い、もう一
方は受信用のバッファとして受信中の画像データを順次
格納する。

【0034】画面表示用に画像出力端子204に出力す
る画像は、上記表示用のバッファにある画像データを用
いるが、上記受信用のバッファに1画面分の画像データ
を受信し終えた時点で使用するバッファを切り替え、前
者を受信用、後者を表示用にし、受信途中の画像が表示
されないようになっている。

【0035】また、画像出力端子204に出力する画像
は、画像処理部204で必要に応じてスケーリングなど
の画像加工や、文字情報などの多重化処理をして、画像
用D／A変換器406に送り、NTSCなどのアナログ
の映像信号に変換して画像出力端子204に出力し、
モニタ207に表示する。

【0036】音声を圧縮して送信することで音声パケッ
トは間欠的に送受信されることになり、その間に画像デ
ータを送信することで音声の通話をしながら画像の送受
信を実現している。

【0037】上記説明では省略したが、音声・画像デー
タ以外に両機器間での通信制御を行なうための制御デー

タが通信制御部間で送受信されている。

【0038】また、本実施例では、音声は双方向、画像
は端末機からセンタ機への片方向として説明したが、セ
ンタ機200に画像送信機能、端末機100に画像受信
機能を設けて画像も双方向で送受信できるようにしても
よい。

【0039】上記のようにして、端末機側で異常を検知
した場合に回線を接続し、そのときの状況を連続した静
止画の送信と音声送信でセンタ機側に送信するようにな
っている。

【0040】ここで、赤外線センサやドアの開閉等を検
知するセンサが動作し、侵入者があったことを検出し
て、そのときの様子をセンタ機に送信する場合を考えた
とき、一般的にカメラは天井など上方に設置される場合
が多く、また侵入者が向いている方向も不定なため、侵
入者の顔を撮影して送信できるとは限らない。

【0041】そこで、センサ106で異常を検出した場
合に、カメラ制御用端子114を介してカメラ108の
光発生部110を発光させるか、音発生部111から音
を出して侵入者がカメラの方を注目するようにさせ、侵
入者の顔を撮影できるようにする。

【0042】光発生部110と音発生部111はどちら
か一方でもよいし、ともに作動させてもよい。または、
周囲が暗い場合は光で、明るい場合は音を作動させるな
ど周囲の環境に応じて一方を選択したり、もしくは両方
を作動させるようにしてもよい。

【0043】発光させる光は、LEDなどを点灯させる
ようになっているが点滅させてもよい。または、懐中電
灯を模した光にするなどより侵入者の注意を引くような
光にしてもよい。

【0044】発生させる音は、一定周波数の連続音を発
生するようになっているが間欠音にしてもよい。また
は、予めサンプリング、もしくは人工的に生成して記憶
させておいた、足音、物音、扉の開閉音、人の声など侵
入者の注意を引くような音にしてもよい。

【0045】あるいは上記を組み合わせ、警備員などが
来たような状況を作り出すようにしてもよい。

【0046】いずれの場合も連続して発光または発生し
続けると、カメラに気がつき避けられたり撮影を妨害さ
れる可能性があるので、最初の画像を取り込んだ後、ま
た所定の時間が経過した時点で停止させるようになって
いる。

【0047】光または音が発生してから、侵入者が気が
つきカメラに注目するまでにはある程度の時間がかかる
ので、光または音を発生させてから少し遅れて画像を取
り込むようになっている。

【0048】侵入を検出するセンサがドアの開閉などを
検出する場合は、検知した時点では侵入者がカメラの撮
影範囲内にいるとは限らない。その場合は、カメラの前
に視野に入ったことを検出する第2のセンサを設け、第

2のセンサが異常を検出した時点で光または音を発生させるようになっている。

【0049】画像を記録してから発信動作を開始すると、センタ機との接続処理中にカメラで撮影されたことに気がついた侵入者が談話回線を物理的に切断するなど画像通信を妨害する行為を行なう可能性があるので、センサ等で異常を検出した時点で発信動作を開始し、接続処理が完了し、画像データを送信できる状態になってから、光または音を発生させ画像を取り込んだら即座に送信処理を開始するようになっている。

【0050】また、上記実施例では、画像は一時的なメモリ領域にしか存在していないが、フラッシュメモリやハードディスクドライブなど電源の供給が断たれてもデータを保持できる補助記憶装置をカメラ内、端末機内、またはセンタ機内に設け、後から画像を取り出してみられるようにしてもよい。

【0051】端末機側の様子を撮影するカメラはビデオカメラを例にして説明したが、ディジタルカメラのような静止画を直接ディジタル画像として撮影できるカメラを用い、アナログ画像に変換して画像入力端子104に入力したり、直接ディジタル画像を取り込める端子を新たに設けて入力できるようにしてもよい。

【0052】
【発明の効果】センサなどで侵入者を検出し、侵入時の画像を撮影する場合、侵入者がカメラの方向を向いているとは限らないので、侵入者を特定することが困難な場合が多いが、本発明のように暗闇の中で発光したり、静寂の中で物音を発生させると、反射的に現象が発生した方向に注意を引かれ、顔を向ける場合が多いので、侵入者の顔を撮影できる確率が高くなる。
【図面の簡単な説明】

【図i】本発明の画像通信装置の端末機の実施形態の概要を示す図である。
【図2】本発明の画像通信装置のセンタ機の実施形態の概要を示す図である。
【図3】本発明の画像通信装置の端末機の実施形態の構成を示すブロック図である。
【図4】本発明の画像通信装置のセンタ機の実施形態の構成を示すブロック図である。
【符号の説明】
100　画像通信装置の端末機本体、101…電話回線接続端子、102…表示装置、103…操作ボタン、104…映像入力端子、105…音声入力端子、106…センサ等の入力端子、107…データ入出力端子、108…ビデオカメラ、109…マイク、110…光発生部、111…音声発生部、112…音声出力端子、113…スピーカ、200…画像通信装置のセンタ機本体、201…電話回線接続端子、202…ハンドセット、203…ダイヤル用ボタン、204…映像入力端子、205…音声入力端子、206…データ入出力端子、207…テレビモニタ、301…CPU、302…システムバス、303…メモリ、304…画像用A／D変換器、305…画像処理部、306…画像メモリ、307…通信制御部、308…モデム、309…音声用A／D変換器、310…音声処理部、311…音声用D／A変換器、312…入力制御部、313…タイマ、314…データ制御部、401…CPU、402…システムバス、403…メモリ、404…画像処理部、405…画像メモリ、406…画像用A／D変換器、407…通信制御部、408…モデム、409…音声用A／D変換器、410…音声処理部、411…音声用D／A変換器、412…入力制御部、413…データ制御部。

【図1】

【図2】
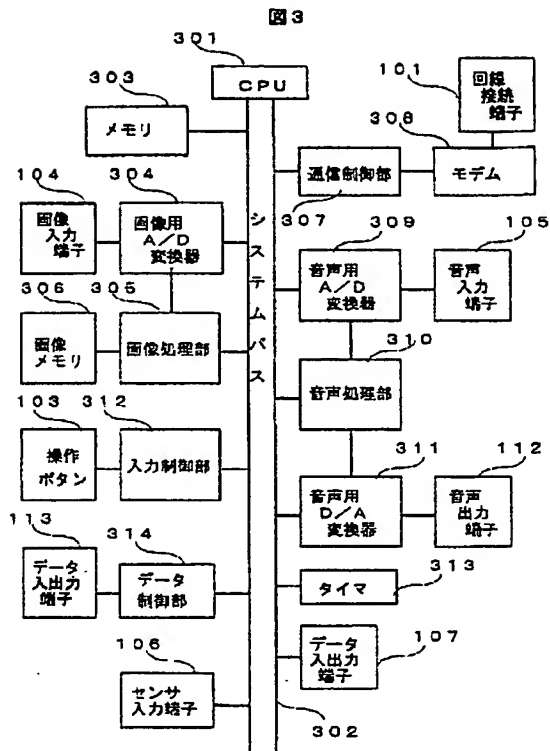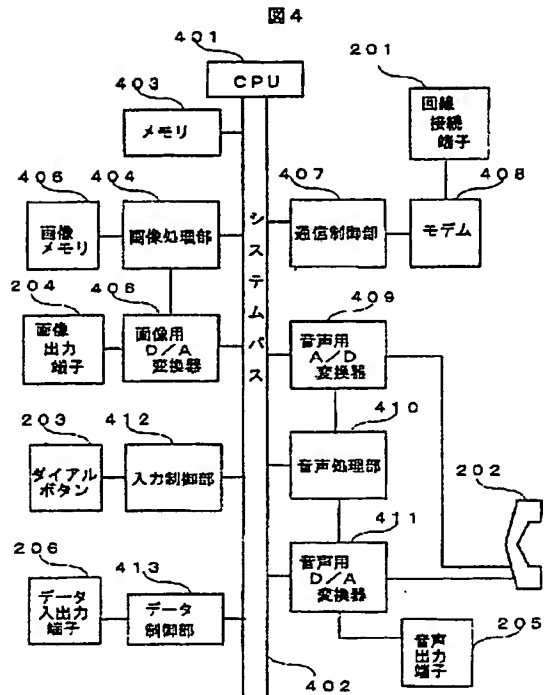
【図3】

図3

【図4】
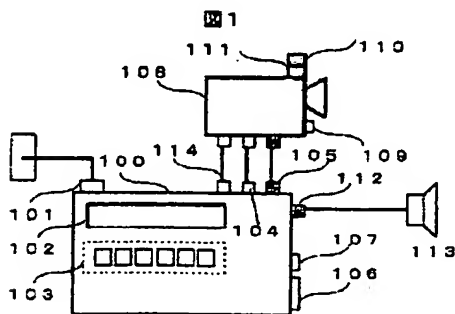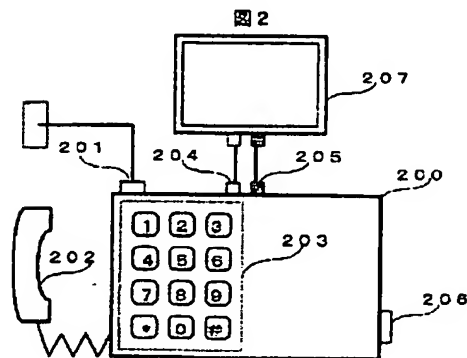
図4

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TITLE: MONITORING SYSTEM DEVICE

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ABSTRACT:

   PROBLEM TO BE SOLVED: To surely photograph a desired image even in a small
number of chances by generating sound or light at a position near a
photographing device such as a camera to attract the attention of an intruder
after the abnormality is detected and photographing the relevant image via the
photographing the intruder.

   SOLUTION: A photographing means is prepared to photograph the situation of
a

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job site together with one or both of a light emitter means and a sound generator means. Sound or light is generated at a position near a photographing device such as a camera to attract the attention of an intruder toward the photographing device after the abnormality is detected and before the image of the job site is photographed. Then the relevant image is photographed. If a sensor 106 detects the abnormality at a terminal device of an image communication device, for example, a light emitting part 110 or a sound generating part 111 of a camera 108 are actuated via a camera control terminal 114. Thus, an intruder pays his/her attention to the camera 108 and the face of the intruder is photographed. Either one of parts 110 and 111 may be employed or both of them may be operated together with each other.

' NOTICES '

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1.This document has been translated by computer. So the translation may not
reflect the original precisely.
2.' shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention detects abnormalities using a sensor
etc. and relates to the monitoring system equipment which transmits the
image at the time of the abnormal occurrence photoed especially by a
communication line etc. with respect to the monitoring system which records
the image at the time of abnormalities.
[0002]
[Description of the Prior Art] Abnormalities are detected using a sensor
etc., the image of the situation which abnormalities have generated is
photoed, or voice is collected, and it is indicated by JP,9-205642,A etc. as
monitoring system equipment which performs data compression processing and
transmits an image and speech information so that it may be suitable for a
communication link.
[0003]
[Problem(s) to be Solved by the Invention] If detection timing, such as a
sensor, is interlocked with in the system which detects an unusual invader
by a sensor etc. and photos the situation at the time of trespass with a
camera etc. and photography is started, the flash which has turned the face
to the camera which can specify who an invader is cannot necessarily be
photoed.
[0004] Unlike the case where an animation can be continuously photoed and
recorded with a video camera etc., when only one still picture cannot be
photoed intermittently, it becomes important that the image which can
specify an invader to the timing which incorporates a still picture can be
photoed.
[0005] Then, the object of this invention is to offer monitoring system
equipment with the ability also of few motion picture camera meetings to
photo [possible] a desired image certainly, as the above-mentioned
technical problem is solved, a phenomenon which attracts an invader's
attention is generated before photoing an image, and the flash observed to
photography equipment can be photoed.
[0006]
[Means for Solving the Problem] A means by which the above-mentioned object
detects abnormalities, such as a sensor, in monitoring system, A means to
generate the light and the sound for attracting attention, and the
photography means for capturing an image, It can attain by having a means to
memorize the photoed image, a means to transmit the memorized image, a means
to digitize and compress image data, means of communications, the control

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means that controls processing of transmission and reception, user actuation, etc., and a dialup means.
[0007]
[Embodiment of the Invention] The example of a gestalt of operation of the pictorial communication equipment of this invention is explained below.
[0008] Drawing 1 is drawing showing an example of the terminal of the image communication device of this invention. 100 The body of a terminal of the image communication device of this invention, 101 an indicating equipment and 103 for a dialup terminal and 102 A manual operation button, 104 a voice input terminal and 106 for an image input terminal and 105 Input terminals, such as a sensor, 107 -- a data input/output terminal and 108 -- for the optical generating section and 111, as for a voice output terminal and 113, the sound generating section and 112 are [a video camera and 109 / a microphone and 110 / a loudspeaker and 114] the terminals for camera control.
[0009] drawing in which drawing 2 shows an example of the pin center,large of the image communication device of this invention -- it is -- 200 -- the pin center,large body of the image communication device of this invention, and 201 -- for the carbon button for a dial, and 204, as for a voice output terminal and 206, an image output terminal and 205 are [a dialup terminal and 202 / a hand set and 203 / a data input/output terminal and 207] television monitors.
[0010] Drawing 3 is the block block diagram showing the configuration of the terminal of the image communication device shown by drawing 1 . CPU by which 301 controls the whole actuation, the system bus with which 302 exchanges data, Memory for 303 to memorize data transmitted and received, such as an image and voice, The A/D converter for images from which 304 changes the video signal of the analog from the image input terminal 104 into a digital signal, and 305 are the image-processing section which performs compression / expanding processing of the image data changed into the digital signal, and processing processing of character representation etc.
[0011] It is the A/D converter for voice from which the modem for carrying out a strange recovery at an analog signal and 309 change the sound signal of the analog from the voice-input terminal 105 at a digital signal in order it transmits and receives the image memory holding the image data changed into the digital signal which outputs 306 to the image output terminal 102, the communications control section which manages establishment and cutting of the digital communication for which 307 used the modem, and the exchange of data transmitted and received, and the digital data which is treating 308 within pictorial communication equipment at the time of digital communication with a general public line.
[0012] A timer for the D/A converter for voice which changes into the sound signal of an analog the speech processing section which performs compression / expanding processing of voice data in which 310 was changed into the digital signal, and the voice data from which 311 is changed into the digital signal, the input-control section by which 312 controls the input from a manual operation button 103, and 313 to measure time amount, and 314 are the data control sections for controlling data I/O with the data input/output terminal 113.
[0013] Drawing 4 is the block block diagram showing the configuration of the pin center,large of the image communication device shown by drawing 2 . CPU

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by which 401 controls the whole actuation, the system bus with which 402 exchanges data, Memory for 403 to memorize data transmitted and received, such as an image and voice, The image-processing section which performs expanding processing of the image data which 404 received as a digital signal, the image memory with which 405 holds the image data under processing, and 406 are an A/D converter for images which changes into the video signal of the analog to the image output terminal 204 the image of the bit map generated by 404.

[0014] It is the A/D converter for voice from which the modem for carrying out a strange recovery at an analog signal and 409 change the sound signal of the analog from a hand set 202 at a digital signal in order to transmit and receive the communications control section which manages establishment and cutting of the digital communication for which 407 used the modem, and the exchange of data which are transmitted and received, and the digital data which is treating 408 within pictorial communication equipment at the time of digital communication with a general public line.

[0015] The D/A converter for voice which changes into the sound signal of an analog the speech processing section which performs compression / expanding processing of voice data in which 410 was changed into the digital signal, and the voice data from which 411 is changed into the digital signal, the input-control section by which 412 controls the input from a manual operation button 203, and 413 are the data control sections for controlling data I/O with the data input/output terminal 206.

[0016] Transmission and reception of an image and voice are attained by connecting a terminal 100 and a pin center, large 200 via the telephone line using the dialup terminals 101 and 201.

[0017] When abnormalities are detected with the image from a sensor 106 or a camera 108, a terminal 100 [whether it sends to the telephone number of the pin center, large 200 beforehand registered using the line connection terminal 101, and] After connecting the telephone line because a pin center, large 200 telephones a terminal 100 and a terminal 100 answers automatically, while operating the modem of a self-opportunity, the digital communication which the modem of a delivery phase hand loom also operated the tone signal to the phase hand loom, and minded the modem of both opportunities is established.

[0018] After the voice which transmits to a pin center, large incorporating from a terminal the voice collected with the microphone 109 built in the camera 108 connected to the terminal through the voice input terminal 105 and digitizing with A/D converter 309 for voice, data compression processing is performed in the speech processing section 310, the amount of data is reduced, and it divides and packet-izes to predetermined die length, and it is stored in memory 303 until transmitting processing starts.

[0019] After digitizing the voice from the speaker of a hand set 202 with A/D converter 409 for voice, data compression processing is performed in the speech processing section 410, the amount of data is reduced, and it divides and packet-izes to predetermined die length, and when transmitting voice to a terminal from a pin center, large, it is stored in memory 403 until transmitting processing starts.

[0020] The packetized voice which received at the terminal is once stored in memory 303, after the speech processing section 310 takes out for every fixed period, performs data decompression processing and returns to

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incompressible digital voice, it analog-izes with D/A converter 311 for voice, and is outputted from the voice output terminal 112, and is uttered from the connected loudspeaker 113.

[0021] The packetized voice which received in the pin center,large is once stored in memory 403, after the speech processing section 410 takes out for every fixed period, performs data decompression processing and returns to incompressible digital voice, is analog-ized with D/A converter 411 for voice, and is uttered from the ear piece of a hand set 202, and the built-in loudspeaker of the television monitor 207 connected through the voice output terminal 205.

[0022] In addition, although it was explained that the voice from a terminal collected the sound with the microphone 109 of camera 108 built-in, the voice from other microphones and sound sources may be connected to the voice input terminal 105, and it may transmit here. Similarly, it may connect with other devices through the voice output terminal 205, and playback and record of the voice of a pin center,large may be done.

[0023] The image photoed with the camera 108 digitizes the image for one sheet at the time of incorporating through the image input terminal 104 with A/D converter 304 for images. Once storing in an image memory 306, the image-processing section 305 the image data in an image memory 306 to the block of a 8 dot x8 dot suitable field A break, After performing transform processing, such as DCT (discrete cosine transform), to each field, quantization etc. is performed and the amount of data is reduced, and it is stored in memory 303 until transmitting processing is performed. After being held and completing the compression processing for one screen, the image data of an image memory 306 incorporates the next screen, until compression processing of the image data for one screen is completed in the image-processing section 305.

[0024] The image packet which received in the pin center,large performs data decompression processing in the image-processing section 404, and accumulates it in the image memory 405. If the image data for one screen gathers, the image-processing section 404 will be returned to an analog signal with D/A converter 406 for images, and will be outputted from the image output terminal 204.

[0025] At a terminal, the communications control section 307 adds and packet-izes header information which shows data, such as an image, voice, etc. stored in memory 303, for the classification of data etc., and transmits to a pin center,large.

[0026] It becomes irregular using a modem 308 and outputs to a public line network from the line connection terminal 101, and it gets over using a modem 308 and the signal received through the line connection terminal 101 at reverse from this public line network is returned to a digital signal.

[0027] The data which the communications control section 307 received analyze a receive packet, judge the classification of a packet based on the header information in this packet, and transmit it to the part which performs each processing for the body of data except this header information.

[0028] When the classification of the above-mentioned packet data is voice data, after transmitting data to the speech processing section 310, elongating and returning to digital data, it returns to D/A converter 311 for voice at the sound signal of delivery and an analog, and outputs to a

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loudspeaker 113 through the voice output terminal 112.

[0029] In the pin center,large, the communications control section 407 adds and packet-izes header information which shows data, such as voice stored in memory 403, for the classification of data etc., and transmits to a terminal.

[0030] It becomes irregular using a modem 408 and outputs to a public line network from the line connection terminal 201, and it gets over using a modem 408 and the signal received through the line connection terminal 101 at reverse from this public line network is returned to a digital signal.

[0031] The data which the communications control section 407 received analyze a packet, judge the classification of a packet based on header information, and transmit it to the part which performs each processing for the body of data except this header information.

[0032] When the classification of the above-mentioned packet data is voice data, after transmitting data to the speech processing section 410, elongating and returning to digital data, it returns to D/A converter 411 for voice at the sound signal of delivery and an analog, and outputs to a hand set 202 and the voice output terminal 205.

[0033] When the above-mentioned packet data are image data, the data which transmit to the image-processing section 404 and are compressed are elongated, and it stores in an image memory 405. This screen memory 405 has a buffer by two screens, one side holds the image received immediately before, and uses it as a buffer for a display, and another side carries out sequential storing of the image data under reception as a buffer for reception.

[0034] Although the image data in the buffer for the above-mentioned display is used for the image outputted to screen display at the image output terminal 204, the buffer used when finishing receiving the image data for one screen to the buffer for the above-mentioned reception is changed, the former is carried out to reception, the latter is carried out to a display, and the image in the middle of reception is displayed.

[0035] Moreover, the image outputted to the image output terminal 204 carries out image processing of a scaling etc., and multiplexing processing of text etc. if needed in the image-processing section 204, changes them into D/A converter 406 for images at the video signal of analogs, such as delivery and NTSC, is outputted to the image output terminal 204, and is displayed on a monitor 207.

[0036] A packetized voice will be intermittently transmitted and received by compressing voice and transmitting, and transmission and reception of an image are realized, carrying out an audio call by transmitting image data between them.

[0037] Although omitted in the above-mentioned explanation, the control data for performing communications control between both devices in addition to voice and image data is transmitted and received between the communications control sections.

[0038] Moreover, although voice explained both directions and an image as a uni directional from a terminal to a pin center,large, an image transmitting function is prepared in a pin center,large 200, and it prepares an image reception function in a terminal 100, and may enable it to also transmit and receive an image in both directions in this example.

[0039] When abnormalities are detected by the terminal side as mentioned

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above, a circuit is connected, and the situation at that time is transmitted to a pin center,large side by the continuous transmission and voice transmission of a still picture.

[0040] Since the direction which the sensor which detects an infrared sensor, closing motion of a door, etc. operated here, and it detected that there was an invader, the camera was generally installed in the upper parts, such as head lining, in many cases when the case where the situation at that time is transmitted to a pin center,large was considered, and the invader has turned to is also unfixed, an invaders face is not photoed and it cannot necessarily transmit.

[0041] Then, when a sensor 106 detects abnormalities, the optical generating section 110 of a camera 108 is made to emit light through the terminal 114 for camera control, or you take out a sound from the sound generating section 111, an invader makes it make it observe the camera, and it enables it to photo an invaders face.

[0042] Either is sufficient as the optical generating section 110 and the sound generating section 111, and they may both be operated. Or when dark in a perimeter, it is light, and when bright, one side may be chosen or you may make it operate both according to the environment of a perimeter, such as operating a sound.

[0043] Although the light made to emit light makes LED etc. turn on, it may make it blink. Or you may make it light which attracts an invaders attention from making it the light which imitated the flashlight etc.

[0044] Although the sound to generate generates the continuation sound of constant frequency, there may be an intermittent sound in it. Or there may be a sound which attracts attention of invaders, such as a sampling or a footstep which generated artificially and was made to memorize, a noise, a closing motion sound of a door, and peoples voice, beforehand.

[0045] Or the above is combined and you may make it make the situation that the guard etc. came.

[0046] When predetermined time amount passes, it is made to stop, after capturing the first image since he notices a camera, and it may be avoided or photography may be blocked, if it continued emitted for it light or generating continuously in any case.

[0047] Since a certain amount of time amount will be taken before an invader notices and observing a camera after light or a sound occurs, and light or a sound is generated, it is behind for a while and an image is captured.

[0048] When the sensor which detects trespass detects closing motion of a door etc., and it detects, there is not necessarily an invader in the photographic coverage of a camera. In that case, the 2nd sensor which detects having gone into the visual field is formed in front of a camera, and when the 2nd sensor detects abnormalities, light or a sound is generated.

[0049] If dispatch actuation is started after recording an image, since the invader who has noticed that a photograph was taken with the camera during connection processing with a pin center,large may perform the act which blocks pictorial communication, such as cutting a discourse circuit physically If start dispatch actuation and connection processing is completed, light or a sound is generated after being in the condition that image data can be transmitted and an image is captured when a sensor etc. detects abnormalities, transmitting processing will be started immediately.

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[0050] Moreover, in the above-mentioned example, although the image exists only in a temporary memory area, even if supply of power sources, such as a flash memory and a hard disk drive, is cut off, the auxiliary storage unit which can hold data is formed the terminal inside of a plane or in a pin center, large in a camera, and an image may be made to be taken out afterwards.

[0051] Although it made the video camera the example and explained it, the camera which photos the situation by the side of a terminal changes a still picture like a digital camera into an analog image using the camera which can be photoed as a direct digital image, and the terminal which can incorporate a direct digital image is newly prepared, and it may enable it to be able to input into the image input terminal 104, or to input it.

[0052]

[Effect of the Invention] When a sensor etc. detects an invader and it photos the image at the time of trespass, since the invader has not necessarily turned to the direction of a camera, it is difficult but to specify an invader in many cases, and if light is emitted in darkness like this invention or a noise is generated in being calm, since attention will be attracted in the direction which the phenomenon generated reflectively and a face will be turned in many cases, the probability which can photo an invaders face becomes high.

[Translation done.]

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MEANS

[Means for Solving the Problem] A means by which the above-mentioned object
detects abnormalities, such as a sensor, in monitoring system, A means to
generate the light and the sound for attracting attention, and the
photography means for capturing an image, It can attain by having a means to
memorize the photoed image, a means to transmit the memorized image, a means
to digitize and compress image data, means of communications, the control
means that controls processing of transmission and reception, user
actuation, etc., and a dialup means.
[0007]
[Embodiment of the Invention] The example of a gestalt of operation of the
pictorial communication equipment of this invention is explained below.
[0008] Drawing 1 is drawing showing an example of the terminal of the image
communication device of this invention. 100 The body of a terminal of the
image communication device of this invention, 101 an indicating equipment
and 103 for a dialup terminal and 102 A manual operation button, 104 a voice
input terminal and 106 for an image input terminal and 105 Input terminals,
such as a sensor, 107 -- a data input/output terminal and 108 -- for the
optical generating section and 111, as for a voice output terminal and 113,
the sound generating section and 112 are [a video camera and 109 / a
microphone and 110 / a loudspeaker and 114] the terminals for camera
control.
[0009] drawing in which drawing 2 shows an example of the pin center,large
of the image communication device of this invention -- it is -- 200 -- the
pin center,large body of the image communication device of this invention,
and 201 -- for the carbon button for a dial, and 204, as for a voice output
terminal and 206, an image output terminal and 205 are [a dialup terminal
and 202 / a hand set and 203 / a data input/output terminal and 207]
television monitors.
[0010] Drawing 3 is the block block diagram showing the configuration of the
terminal of the image communication device shown by drawing 1 . CPU by which
301 controls the whole actuation, the system bus with which 302 exchanges
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image and voice, The A/D converter for images from which 304 changes the
video signal of the analog from the image input terminal 104 into a digital
signal, and 305 are the image-processing section which performs
compression / expanding processing of the image data changed into the
digital signal, and processing processing of character representation etc.
[0011] It is the A/D converter for voice from which the modem for carrying
out a strange recovery at an analog signal and 309 change the sound signal

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of the analog from the voice-input terminal 105 at a digital signal in order it transmits and receives the image memory holding the image data changed into the digital signal which outputs 306 to the image output terminal 102, the communications control section which manages establishment and cutting of the digital communication for which 307 used the modem, and the exchange of data transmitted and received, and the digital data which is treating 308 within pictorial communication equipment at the time of digital communication with a general public line.

[0012] A timer for the D/A converter for voice which changes into the sound signal of an analog the speech processing section which performs compression / expanding processing of voice data in which 310 was changed into the digital signal, and the voice data from which 311 is changed into the digital signal, the input-control section by which 312 controls the input from a manual operation button 103, and 313 to measure time amount, and 314 are the data control sections for controlling data I/O with the data input/output terminal 113.

[0013] Drawing 4 is the block block diagram showing the configuration of the pin center, large of the image communication device shown by drawing 2 . CPU by which 401 controls the whole actuation, the system bus with which 402 exchanges data, Memory for 403 to memorize data transmitted and received, such as an image and voice, The image-processing section which performs expanding processing of the image data which 404 received as a digital signal, the image memory with which 405 holds the image data under processing, and 406 are an A/D converter for images which changes into the video signal of the analog to the image output terminal 204 the image of the bit map generated by 404.

[0014] It is the A/D converter for voice from which the modem for carrying out a strange recovery at an analog signal and 409 change the sound signal of the analog from a hand set 202 at a digital signal in order to transmit and receive the communications control section which manages establishment and cutting of the digital communication for which 407 used the modem, and the exchange of data which are transmitted and received, and the digital data which is treating 408 within pictorial communication equipment at the time of digital communication with a general public line.

[0015] The D/A converter for voice which changes into the sound signal of an analog the speech processing section which performs compression / expanding processing of voice data in which 410 was changed into the digital signal, and the voice data from which 411 is changed into the digital signal, the input-control section by which 412 controls the input from a manual operation button 203, and 413 are the data control sections for controlling data I/O with the data input/output terminal 206.

[0016] Transmission and reception of an image and voice are attained by connecting a terminal 100 and a pin center, large 200 via the telephone line using the dialup terminals 101 and 201.

[0017] When abnormalities are detected with the image from a sensor 106 or a camera 108, a terminal 100 [whether it sends to the telephone number of the pin center, large 200 beforehand registered using the line connection terminal 101, and] After connecting the telephone line because a pin center, large 200 telephones a terminal 100 and a terminal 100 answers automatically, while operating the modem of a self-opportunity, the digital communication which the modem of a delivery phase hand loom also operated

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the tone signal to the phase hand loom, and minded the modem of both opportunities is established.

[0018] After the voice which transmits to a pin center,large incorporating from a terminal the voice collected with the microphone 109 built in the camera 108 connected to the terminal through the voice input terminal 105 and digitizing with A/D converter 309 for voice, data compression processing is performed in the speech processing section 310, the amount of data is reduced, and it divides and packet-izes to predetermined die length, and it is stored in memory 303 until transmitting processing starts.

[0019] After digitizing the voice from the speaker of a hand set 202 with A/D converter 409 for voice, data compression processing is performed in the speech processing section 410, the amount of data is reduced, and it divides and packet-izes to predetermined die length, and when transmitting voice to a terminal from a pin center,large, it is stored in memory 403 until transmitting processing starts.

[0020] The packetized voice which received at the terminal is once stored in memory 303, after the speech processing section 310 takes out for every fixed period, performs data decompression processing and returns to incompressible digital voice, it analog-izes with D/A converter 311 for voice, and is outputted from the voice output terminal 112, and is uttered from the connected loudspeaker 113.

[0021] The packetized voice which received in the pin center,large is once stored in memory 403, after the speech processing section 410 takes out for every fixed period, performs data decompression processing and returns to incompressible digital voice, is analog-ized with D/A converter 411 for voice, and is uttered from the ear piece of a hand set 202, and the built-in loudspeaker of the television monitor 207 connected through the voice output terminal 205.

[0022] In addition, although it was explained that the voice from a terminal collected the sound with the microphone 109 of camera 108 built-in, the voice from other microphones and sound sources may be connected to the voice input terminal 105, and it may transmit here. Similarly, it may connect with other devices through the voice output terminal 205, and playback and record of the voice of a pin center,large may be done.

[0023] The image photoed with the camera 108 digitizes the image for one sheet at the time of incorporating through the image input terminal 104 with A/D converter 304 for images. Once storing in an image memory 306, the image-processing section 305 the image data in an image memory 306 to the block of a 8 dot x8 dot suitable field A break, After performing transform processing, such as DCT (discrete cosine transform), to each field, quantization etc. is performed and the amount of data is reduced, and it is stored in memory 303 until transmitting processing is performed. After being held and completing the compression processing for one screen, the image data of an image memory 306 incorporates the next screen, until compression processing of the image data for one screen is completed in the image-processing section 305.

[0024] The image packet which received in the pin center,large performs data decompression processing in the image-processing section 404, and accumulates it in the image memory 405. If the image data for one screen gathers, the image-processing section 404 will be returned to an analog signal with D/A converter 406 for images, and will be outputted from the

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image output terminal 204.

[0025] At a terminal, the communications control section 307 adds and packet-izes header information which shows data, such as an image, voice, etc. stored in memory 303, for the classification of data etc., and transmits to a pin center,large.

[0026] It becomes irregular using a modem 308 and outputs to a public line network from the line connection terminal 101, and it gets over using a modem 308 and the signal received through the line connection terminal 101 at reverse from this public line network is returned to a digital signal.

[0027] The data which the communications control section 307 received analyze a receive packet, judge the classification of a packet based on the header information in this packet, and transmit it to the part which performs each processing for the body of data except this header information.

[0028] When the classification of the above-mentioned packet data is voice data, after transmitting data to the speech processing section 310, elongating and returning to digital data, it returns to D/A converter 311 for voice at the sound signal of delivery and an analog, and outputs to a loudspeaker 113 through the voice output terminal 112.

[0029] In the pin center,large, the communications control section 407 adds and packet-izes header information which shows data, such as voice stored in memory 403, for the classification of data etc., and transmits to a terminal.

[0030] It becomes irregular using a modem 408 and outputs to a public line network from the line connection terminal 201, and it gets over using a modem 408 and the signal received through the line connection terminal 101 at reverse from this public line network is returned to a digital signal.

[0031] The data which the communications control section 407 received analyze a packet, judge the classification of a packet based on header information, and transmit it to the part which performs each processing for the body of data except this header information.

[0032] When the classification of the above-mentioned packet data is voice data, after transmitting data to the speech processing section 410, elongating and returning to digital data, it returns to D/A converter 411 for voice at the sound signal of delivery and an analog, and outputs to a hand set 202 and the voice output terminal 205.

[0033] When the above-mentioned packet data are image data, the data which transmit to the image-processing section 404 and are compressed are elongated, and it stores in an image memory 405. This screen memory 405 has a buffer by two screens, one side holds the image received immediately before, and uses it as a buffer for a display, and another side carries out sequential storing of the image data under reception as a buffer for reception.

[0034] Although the image data in the buffer for the above-mentioned display is used for the image outputted to screen display at the image output terminal 204, the buffer used when finishing receiving the image data for one screen to the buffer for the above-mentioned reception is changed, the former is carried out to reception, the latter is carried out to a display, and the image in the middle of reception is displayed.

[0035] Moreover, the image outputted to the image output terminal 204 carries out image processing of a scaling etc., and multiplexing processing

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of text etc. if needed in the image-processing section 204, changes them into D/A converter 406 for images at the video signal of analogs, such as delivery and NTSC, is outputted to the image output terminal 204, and is displayed on a monitor 207.

[0036] A packetized voice will be intermittently transmitted and received by compressing voice and transmitting, and transmission and reception of an image are realized, carrying out an audio call by transmitting image data between them.

[0037] Although omitted in the above-mentioned explanation, the control data for performing communications control between both devices in addition to voice and image data is transmitted and received between the communications control sections.

[0038] Moreover, although voice explained both directions and an image as a uni directional from a terminal to a pin center,large, an image transmitting function is prepared in a pin center,large 200, and it prepares an image reception function in a terminal 100, and may enable it to also transmit and receive an image in both directions in this example.

[0039] When abnormalities are detected by the terminal side as mentioned above, a circuit is connected, and the situation at that time is transmitted to a pin center,large side by the continuous transmission and voice transmission of a still picture.

[0040] Since the direction which the sensor which detects an infrared sensor, closing motion of a door, etc. operated here, and it detected that there was an invader, the camera was generally installed in the upper parts, such as head lining, in many cases when the case where the situation at that time is transmitted to a pin center,large was considered, and the invader has turned to is also unfixed, an invaders face is not photoed and it cannot necessarily transmit.

[0041] Then, when a sensor 106 detects abnormalities, the optical generating section 110 of a camera 108 is made to emit light through the terminal 114 for camera control, or you take out a sound from the sound generating section 111, an invader makes it make it observe the camera, and it enables it to photo an invaders face.

[0042] Either is sufficient as the optical generating section 110 and the sound generating section 111, and they may both be operated. Or when dark in a perimeter, it is light, and when bright, one side may be chosen or you may make it operate both according to the environment of a perimeter, such as operating a sound.

[0043] Although the light made to emit light makes LED etc. turn on, it may make it blink. Or you may make it light which attracts an invaders attention from making it the light which imitated the flashlight etc.

[0044] Although the sound to generate generates the continuation sound of constant frequency, there may be an intermittent sound in it. Or there may be a sound which attracts attention of invaders, such as a sampling or a footstep which generated artificially and was made to memorize, a noise, a closing motion sound of a door, and peoples voice, beforehand.

[0045] Or the above is combined and you may make it make the situation that the guard etc. came.

[0046] When predetermined time amount passes, it is made to stop, after capturing the first image since he notices a camera, and it may be avoided or photography may be blocked, if it continued emitted for it light or

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generating continuously in any case.

[0047] Since a certain amount of time amount will be taken before an invader notices and observing a camera after light or a sound occurs, and light or a sound is generated, it is behind for a while and an image is captured.

[0048] When the sensor which detects trespass detects closing motion of a door etc., and it detects, there is not necessarily an invader in the photographic coverage of a camera. In that case, the 2nd sensor which detects having gone into the visual field is formed in front of a camera, and when the 2nd sensor detects abnormalities, light or a sound is generated.

[0049] If dispatch actuation is started after recording an image, since the invader who has noticed that a photograph was taken with the camera during connection processing with a pin center, large may perform the act which blocks pictorial communication, such as cutting a discourse circuit physically If start dispatch actuation and connection processing is completed, light or a sound is generated after being in the condition that image data can be transmitted and an image is captured when a sensor etc. detects abnormalities, transmitting processing will be started immediately.

[0050] Moreover, in the above-mentioned example, although the image exists only in a temporary memory area, even if supply of power sources, such as a flash memory and a hard disk drive, is cut off, the auxiliary storage unit which can hold data is formed the terminal inside of a plane or in a pin center, large in a camera, and an image may be made to be taken out afterwards.

[0051] Although it made the video camera the example and explained it, the camera which photos the situation by the side of a terminal changes a still picture like a digital camera into an analog image using the camera which can be photoed as a direct digital image, and the terminal which can incorporate a direct digital image is newly prepared, and it may enable it to be able to input into the image input terminal 104, or to input it.

[Translation done.]
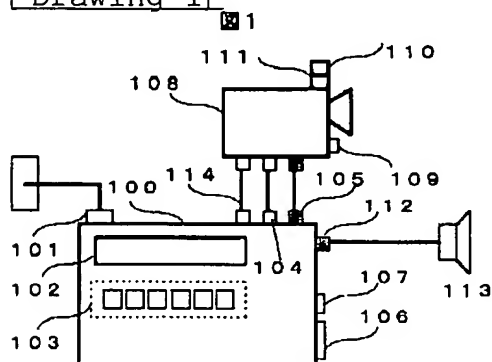
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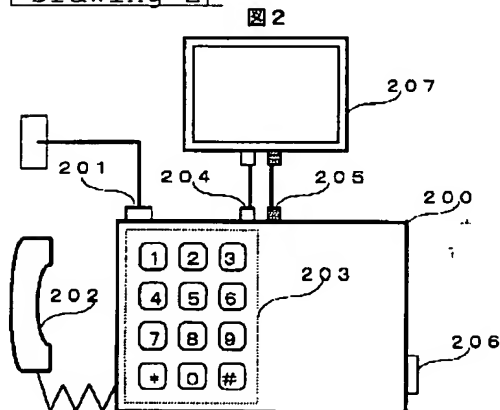damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not
reflect the original precisely.
2.' shows the word which can not be translated.
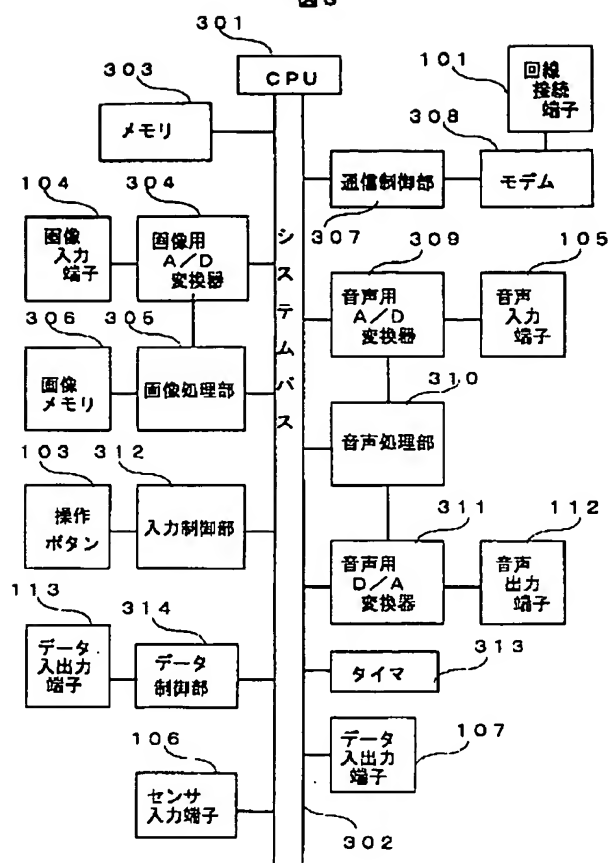3.In the drawings, any words are not translated.

DRAWINGS
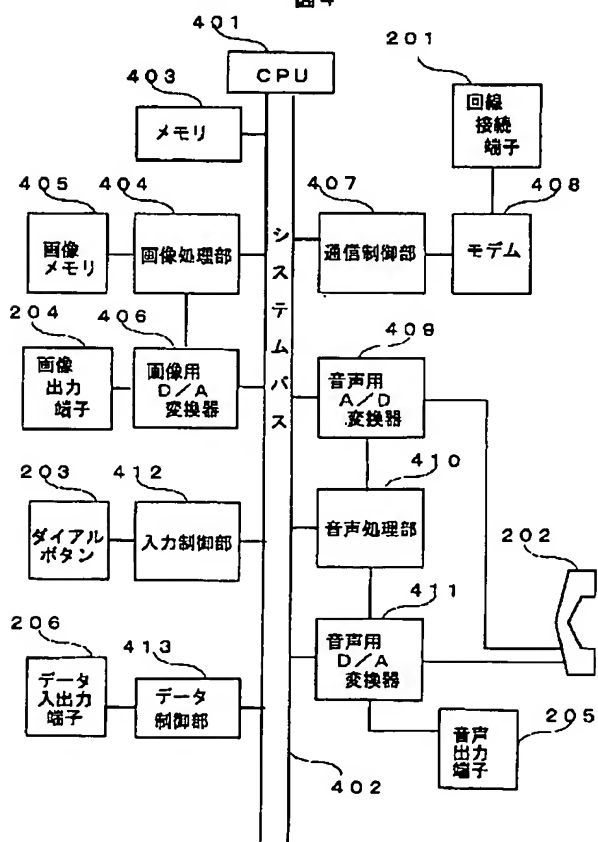
[Drawing 1]

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